CLAIMS

1. A process for preparing a modified particulate solid comprising reacting a dispersant with a compound in the presence of a particulate solid and a liquid medium, characterised in that:

a) the dispersant has at least one reactable group selected from keto, aldehyde and beta-diketoester groups,

b) the compound has at least two groups reactive towards said keto, aldehyde and/or beta-diketoester groups.

2. A process according to claim 1 wherein:

(i) the modified particulate solid prepared by the process is an encapsulated particulate solid;

(ii) the dispersant is a dispersant having at least one cross-linkable group selected from keto, aldehyde and beta-diketoester groups;

(iii) the compound is a cross-linking agent having at least two cross-linking groups reactive towards said cross-linkable group(s); and

(iv) the reaction comprises cross-linking the dispersant with the cross-linking agent, thereby encapsulating the particulate solid within the cross-linked dispersant.

3. A process according to any one of the preceding claims wherein the compound is a cross-linking agent soluble in the liquid medium.

4. A process according to any one of the preceding claims wherein the compound is a cross-linking agent having at least two cross-linking groups reactive towards said cross-linkable group(s) and the cross-linking groups are nucleophiles.

5. A process according to claim 4 wherein the cross-linking groups are each independently selected from amine, imine, hydrazide and thiol groups.

6. A process according to any one of the preceding claims wherein the compound is a cross-linking agent having at least two cross-linking groups reactive towards said cross-linkable group(s) and the cross-linking groups are electrophiles.

7. A process according to claim 6 wherein the cross-linking groups are each independently selected from activated olefinic, diazonium and carbonyl-containing groups.

8. A process according to any one of the preceding claims wherein the dispersant is polymeric.

9. A process according to any one of the preceding claims wherein the dispersant is a polyvinyl dispersant.

10. A process according to claim 9 wherein the polyvinyl dispersant comprises at least one monomer residue selected from acrolein, methyl vinyl ketone, acetoacetoxy ethylacrylate, acetoacetoxy propylmethacrylate, allyl acetoacetate, acetoacetoxybutyl methacrylate, 2,3-di(acetoacetoxy)propyl methacrylate, acetoacetoxy ethylmethacrylate and diacetone acrylamide.

11. A process according to claim 9 or 10 wherein the polyvinyl dispersant comprises at least one monomer residue from diacetone acrylamide.

12. A process according to any one of the preceding claims wherein the dispersant has at least one beta-diketoester cross-linkable group.

13. A process according to claim 12 wherein the liquid medium further comprises a dispersant having at least one enamine/ketimine group which is convertible to a beta-diketoester group.

14. A process according to claim 13 wherein the dispersant having at least one enamine/ketimine group is obtained or obtainable by reaction of a dispersant having at least one beta-diketoester group with a mono-functional amine.

15. A process according to claim 14 wherein the mono-functional amine is ammonia.

16. A process according to any one of the preceding claims wherein the reaction is cross-linking performed at a temperature of less than 60°C.

17. A process according to any one of the preceding claims wherein the modified particulate solid has a Z-average particle size of at most 50% greater than the Z-average particle size of the particulate solid prior to addition of the compound.

18. A process according to any one of the preceding claims wherein the liquid medium comprises water.

19. A process according to any one of the preceding claims comprising the further step of isolating the resultant modified particulate solid from the liquid medium.

20. A process according to anyone of the preceding claims wherein the reaction is performed by mixing the following ingredients:

a) the liquid medium;
b) the particulate solid in a weight ratio of 1:100 to 1:3;
c) the dispersant in a weight ratio of 1:100 to 1:3.3; and
d) the compound in a weight ratio of 1:10000 to 1:10;

wherein all weight ratios are relative to the weight of the liquid medium.

21. A modified particulate solid obtained or obtainable by a process according to any one of the preceding claims.

22. A composition comprising a liquid vehicle and a modified particulate solid according to claim 21.

23. A composition according to claim 22 having a viscosity of less than 20mPa.s at 25°C.

24. A composition according to claim 22 or 23 wherein the liquid vehicle comprises water and an organic solvent in a weight ratio of 99:1 to 5:95.

25. A process for printing an image on a substrate comprising applying a composition according to claim 22, 23 or 24 to the substrate.

26. A process according to claim 25 wherein the printing is performed by means of an ink jet printer.

27. A paper, a plastic film or a textile material printed with a composition according to claim 22, 23 or 24 by means of a process according to claim 25 or 26.

28. An ink jet printer cartridge comprising a chamber and a composition wherein the composition is present in the chamber and the composition is as claimed in claim 22, 23 or 24.

29. A composition according to claim 22 where the particulate solid is a colorant or filler and the composition further comprises a binder.